Alnus acuminata

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Alnus acuminata spp. argutta (Schlecht.) Farlow

Taxonomy and nomenclature

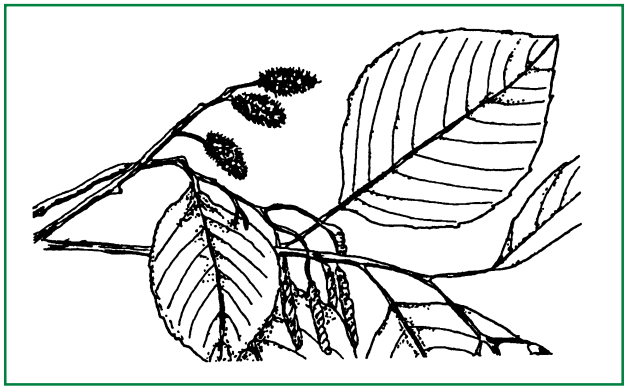
Family: Betulaceae

Synonyms: *Alnus jorullensis* H.B.K., *A. ferruginea* Kundh, *A. mirbelli* Spach, *A. spachii*

Vernacular/common names: Aliso, ilite (Mexico); palo de lama (Guatemala), jaúl (Costa Rica); cerezo (Colombia).

Distribution and habitat

Native to the high mountain regions of tropical America from Mexico to the north of Argentina, especially along rivers. Prefers 4 - 15°C but can survive temperatures below 0°C for shorter periods. Grows on slopes from 1500 to 3200 m in altitude, with annual rainfall of 1000-3000 mm and a dry season of 3-5 months. Can grow on poor soils but prefers deep, well drained silt or sandy silt of alluvial or volcanic origin. Tolerant to acid soils, pH 4.5-6.0.



Branch with female and male inflorescences. From: CATIE

Botanical description

Tree up to 25 m tall; trunk up to 150 cm in diameter, straight, with numerous yellow lenticels. Crown wide. Leaves alternate, simple with serrate margin. The flowers are unisexual, male and female flowers in separate inflorescences, called catkins, on the same tree. Male catkin 5-12 cm, hanging; female 2 cm, erect.

Wood cream-coloured, reddish when dry, without smell. Grain straight, texture fine, density 0.36-0.42 g/cm^3. Not resistant to rot or insects. Easy to work and used for coffins, boxes for transporting vegetables, shoe lasts, matches, carpentry and furniture.

Fruit and seed description

Fruit: the fruiting catkin is cone-like, dehiscent, 1.5-2.0 cm long, 1.2-2.0 cm wide, with persistent, woody scales; green/yellowish at first, later brown. Fruit a one-seeded samara with winged bract. There are 80-100 seeds per catkin and 6,000-10,000 female catkins per tree.

Seed: elliptic, flattened, very small (0.65-1.30 mm long). Dispersed by wind. 800,000-4,500,000 seeds per kg.

Flowering and fruiting habit

Flowers early; in Costa Rica male flowers often in Jan-Feb, female Sep-Jan.

Harvest

The ripe catkins are collected when the colour has changed from green to yellow/brown and before they open. They are dried on paper in a shady place protected from wind and, if necessary, after-ripened in a cool and dry place.

In Costa Rica the harvest season is Aug-Nov, with a peak in Sep-Oct. Collection is only from trees older than 10 years. Younger trees bear viable seed, but smaller and with lower germination.

It is good practice to cut the catkin in two and observe the seed. If the embryos are white and the wings light brown, the fruits are ready to be collected. Catkins from previous years can persist on the tree; they are dark brown or black, contain no seeds and should be avoided.

Processing and handling

After harvest the catkins should be kept in perforated sacks or paper bags to allow ventilation. After 36 hours at room temperature followed by 2 hours in sun they will open. After extraction the seed can be cleaned with a sieve. If collection is done at the right time, flotation is not necessary.

Storage and viability

The seed is considered orthodox and can be stored in hermetically sealed glass bottles or plastic bags, preferably at 3-5°C. After one year in a ordinary refrigerator, germination is reduced with app. 2% every month. If stored at room temperature losses in germination between 5 and 10% after 9 months have been reported.

Dormancy and pretreatment

The seeds are pretreated by stratification in moist sand at 5°C for 10-20 days.

Sowing and germination

Broadcast sowing in beds, 15-20 g/m^2. Press the seeds gently into the substrate or cover with moss or a thin layer of soil and sand (1:1) and water twice daily. After 13 days the first leaves will appear and the secondary roots begin to develop nodules.

After germination it is important to remove the seedlings gradually away from the sun so that the shoots can lignify and the roots develop. Cuttings can be made from seedlings that are 3-5 cm tall and have 4-6 leaves. The cuttings should be watered and kept in the shade the first 2 weeks. If done correctly, up to 90% of the cuttings survive. Outplanting can normally take place 4-6 weeks later when the plants are 30-40 cm.

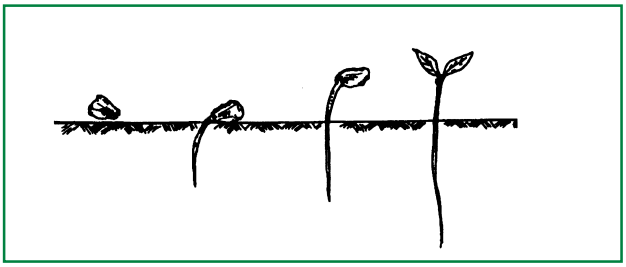
Phytosanitary problems

During storage, the seeds can be infected with *Fusarium* and be damaged by species within the genus *Trichoderma*. In the nursery and plantations, fungi like *Rosellinia bunodes*, *Colletotrichum* and *Phomopsis* damage roots and shoots. *Phomopsis* can furthermore cause lesions in the foliage of older trees. The insects *Hypselonotus atratus* (Fam. Coreidae) and *Nodonota irazuensis* (Chrysomelidae) can cause defoliation in the nursery.

Selected readings

Centro Agronómico Tropical de Investigación y Enseñanza. 1996. *Jaúl (Alnus acuminata). Especia de árbol de uso múltiple en América Central*. Serie Técnica. Informe Técnico no. 324. 33 p.

Centro Agronómico Tropical de Investigación y Enseñanza: Proyecto Cultivo de Arboles de uso Múltiple. 1991. *Plagas y enfermedades forestales en América Central: guía de campo.* Turrialba, (C.R.). Serie Técnica. Manual Técnico no. 4. 260p.



Stages in the germination of *Alnus acuminata.* From: CATIE.

THIS NOTE WAS PREPARED BY CENTRO AGRONÓMICO TROPICAL DE INVESTIGACIÓN Y ENSEÑANZA AND TRANSLATED BY DFSC

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